Agricultural Extension Service ● University of Minnesota

3. FACT SHEET

4.

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Bovine Virus Diarrhea

Importance, incidence, and susceptibility

Bovine virus diarrhea (BVD) is an infectious cattle disease that is widespread throughout the United States. Blood sample analyses show 70 to 80 percent of slaughtered cattle have had BVD. Blood sample analyses also show that many herds of healthy appearing cattle have been infected, yet only rarely have the animals appeared sick.

Although BVD is often a mild disease, it can cause severe damage to surface membranes of the entire digestive tract as well as the eyes. To some extent, it can damage the nasal passages. BVD also severely debilitates animals' disease defenses, making them highly susceptible to other diseases. BVD causes extensive cattle losses under some conditions. Herds of highly susceptible cattle may suffer 10 to 25 percent death losses.

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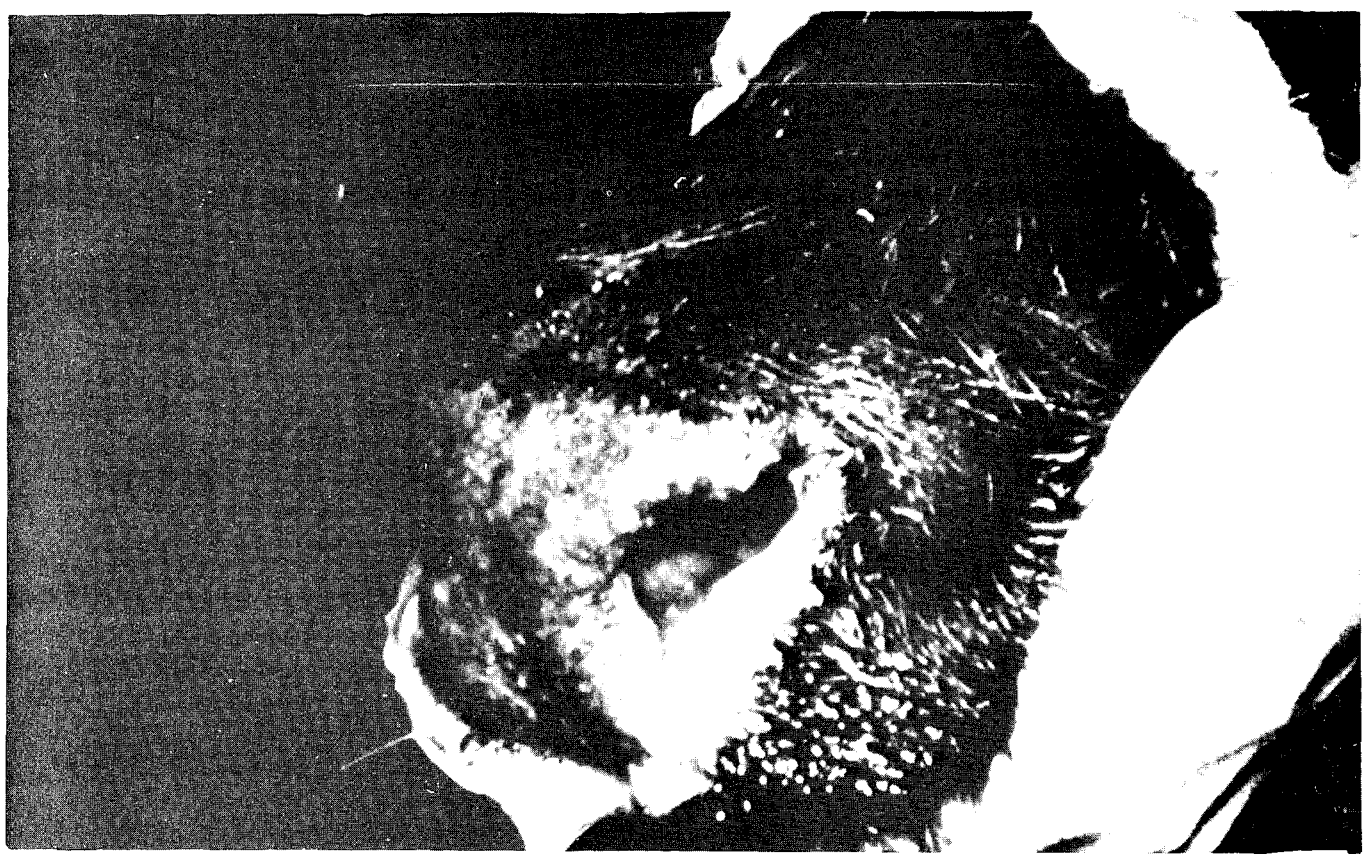
Clinical signs of BVD include excessive salivation and lesions over the muzzle. Similar ulcerlike lesions may also be found inside the mouth.



BVD in dairy cattle

Among dairy herds, the most severe problems are in adult cattle in isolated herds never before exposed to BVD. Generally, the highly susceptible adult animal is much more seriously affected by BVD than is the animal less than 6 to 10 months of age. This pattern of age susceptibility and disease severity is somewhat comparable to mumps in humans; mumps, too, is a milder disease in children than among adults. However in nonimmune animals, BVD can be a disease of all ages. Calves born of immune mothers (those vaccinated or having had BVD) are normally protected for about 4 to 8 months after birth. Protection comes from the antibody in colostrum calves receive from their mothers.

BVD in beef cattle

BVD is a serious disease among feeder calves. Most of these calves are nonimmune when they leave the ranch. This may be for several reasons. The calves may have come from range having low cattle populations per acre; the open air may not have allowed BVD to spread. Also, BVD may not have even been present on the range; therefore, no immunity would exist in cows or calves. Like dairy calves, beef calves born of immune mothers (from having had the disease or from vaccination) are somewhat resistant for up to 4 to 8 months of age. This is because of the antibody in their mothers' colostrum milk. However, many beef calves are weaned and sold at 6 to 8 months of age (about the time the immunity their mothers gave them is becoming low). Often, highly susceptible calves from many sources are put together at auction markets. Prevalence of BVD in some herds increases the likelihood in some calves among the group having BVD. This often results in BVD exposure to highly susceptible feeder calves. Exposure to BVD, as well as to other viral and bacterial disease producers, plus the stress of weaning, sorting, and shipping, often results in acute illness for feeder calves arriving at the feedlot. Often, different combinations of BVD, infectious bovine rhinotracheitis, parainfluenza, other uncharacterized viral agents, and pasteurella pneumonia result in serious calf death losses.

Clinical signs:

- Body temperature may be elevated from normal to 106°F. for 3 to 10 days.
- Diarrhea may be present in varying degrees; however, rarely is red blood present in the feces.
- Loss of appetite always occurs in acute cases of BVD and is often indicated by a gaunt abdomen. Chronic cases may show a slight desire to eat.
- Chronic, longstanding cases often show lameness, loosening of the wall of the hoof, and sores on the skin between the claws. There is usually very little swelling of the ankle as in foot rot.
- Because of weakness, severely affected animals may have a wobbly gait.
- Excessive saliva dripping from the mouth is an early sign. This may be associated with sores inside the mouth.
- Scabby nose and eye membranes may occur in chronic cases.
- BVD often affects and results in serious or fatal disease in dairy cows during health stresses of the early postpartum period (first calf heifers, milk fever, retained placenta, displaced abomasum, ketosis, and mastitis).
- Feeder calves having BVD often suffer concurrent pasteurella pneumonia, so they may have little stamina. Such animals breathe very heavily after limited exercise.

Spread

Evidence indicates BVD is contacted primarily by inhaling the virus into the lungs. Some spread may occur by ingesting BVD virus. The virus is shed by animals sick from BVD or recovering from the infection.

Rate of spread depends on how closely cattle are confined and how much BVD virus is in the air and available to contaminate food and air. In a dairy barn with poor ventilation, the disease may affect most animals in 7 to 10 days. On the same farm, outside stock having plenty of fresh air may not get sick at all or may develop cases at a slow rate. Range cattle which don't congregate may take weeks to months for the whole herd to contact the disease.

Diagnosis

Diagnosis is not simple because often only a few symptoms are present. In general, clinical signs, pattern of disease spread, changes found on post mortem examination, sampling for BVD virus, and blood samples help establish a diagnosis.

Treatment

BVD is difficult to treat. In most instances, a veterinarian should decide the treatment according to the needs of the individual animal. Treatment may be extensive and yet unsuccessful, depending on the seriousness of the individual case.

Prevention

Vaccines are available. A program of preventive immunization can be tailored by your veterinarian for your health management practices and the present health of your herd.

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